## REMARKS/ARGUMENTS

1. The Examiner rejected claims 26-34 and 40-50 under 35 U.S.C. § 112, first paragraph, as failing to comply with the enablement requirement. Claims 26-34 and 40-50 were also rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. Claims 26-34 and 40-50 were rejected under 35 U.S.C. § 102(e) as being anticipated by Lehtiniemi et al. (U.S. Patent No. 6,466,299). Lastly, the drawings were objected to under 37 C.F.R. § 1.83(a) for failing to show the "non-thermal, non-visual sensation" recited in the claims. Reconsideration of this application is respectfully requested in view of the amendments and/or remarks provided herein.

Objection to the Drawings

2. The drawings were objected to under 37 C.F.R. § 1.83(a) for failing to show the "non-thermal, non-visual sensation" recited in the claims. Applicants submit that a "non-visual, non-thermal sensation," such as a vibration sensation, texture sensation, or a pressure sensation, need not be shown in the drawings for one of ordinary skill in the art to understand Applicants' invention. Accordingly, Applicants disagree with the Examiner's drawing requirement.

35 U.S.C. § 113 and 37 C.F.R. § 1.81 provide the drawing requirement; whereas, 37 C.F.R. § 1.83 provides the requirements for the contents of a drawing when a drawing is necessary. Pursuant to 35 U.S.C. § 113 and 37 C.F.R. § 1.81, a drawing need be furnished only where necessary to facilitate an understanding of the claimed subject matter. Thus, a drawing need not be submitted in every case. In fact, M.P.E.P. 608.02(III) expressly provides that a drawing is ***not*** necessary for a claim "directed to an article, apparatus, or system where the sole distinguishing feature is the presence of a particular material." M.P.E.P. § 608.02(III) is directly applicable to the present application.

The pending independent claims of the present application (i.e., claims 26, 29, 32, 34, and 40) are directed to a housing (i.e., an "article" or "apparatus" as used in M.P.E.P. § 608.02(III)) in which the sole distinguishing feature is the presence of a "sensory producing substance" (i.e., a "particular material" as used in M.P.E.P. § 608.02(III)) in the outer surface of the housing. In Applicants' claims, the particular material (i.e., the sensory producing substance)

produces a non-thermal, non-visual sensation. Thus, the Manual of Patent Examining Procedure expressly supports Applicants' position that a drawing of the sensory producing substance is not necessary for an understanding of the invention.

Applicants submit that M.P.E.P. § 608.02(III) is sound in its exception to the drawing requirement under various circumstances, such as in the present case, because providing a drawing that shows the excepted subject matter would be extremely difficult, at best. For example, in connection with the present application, how would one show a sensory producing substance that provides a non-visual, non-thermal sensation? It's extremely difficult, if not impossible. The net effect of the requirement would be to show a material's physical sensation on paper. Applicants submit it can't be done. The drafters of the statute, the Code of Federal Regulations and the Manual of Patent Examining Procedure likely realized that certain physical phenomena cannot be readily shown in drawings and are not necessary for those of ordinary skill in the art to understand the claimed invention. Thus, the drafters wrote the requirements to allow certain exceptions to the drawing requirement. As detailed above, the subject provision of Applicants' claims (i.e., a sensory producing substance that provides at least a non-thermal, non-visual sensation) falls under one of those exceptions.

Notwithstanding that a drawing is not necessary in the present application, Applicants have included drawings in their application. Thus, Applicants' drawings are governed by the second sentence of 35 U.S.C. § 113 and 37 C.F.R. § 1.81(c). *See* M.P.E.P. § 608.02(III). Applicants submit that the drawings presently contained in the application comply with 37 C.F.R. § 1.83(a) because the drawings show all of the illustratable features of the claimed invention. In particular, the drawings show a housing (12) of an exemplary portable electronic device (10), wherein the housing has an outer surface (14) (*see* FIG. 2). The drawings also show an exemplary set of components (16, 18) for generating a stimulus to activate the sensory producing substance included in the outer surface (14) of the housing (10) (*see* FIG. 3). Therefore, Applicants' drawings show every structural detail of Applicants' claims. *See* M.P.E.P. 608.02(d) (citing *Ex parte Good*, 1911 C.D. 43, 164 O.G. 739 (Comm'r Pat. 1911)). The only aspect of Applicants' claims not shown in the drawings is the intrinsic characteristics of the claimed housing's outer surface, namely, the sensory producing substance that produces a specified sensation responsive to the stimulus. However, Applicants' specification describes the

claimed intrinsic features of Applicants' claimed outer housing surface as detailed below and in Applicants' RCE submission dated January 26, 2006.

Therefore, for the reasons set forth above, Applicants submit that the non-thermal, non-visual sensation feature of Applicants' claims is excluded from the drawing requirement pursuant to the express provisions of M.P.E.P. § 608.02(III) and that Applicants' drawings comply with 37 C.F.R. § 1.83(a) by showing all the structural details of Applicants' claimed invention. Accordingly, Applicants request that the Examiner withdraw his objection to the drawings.

Rejections under 35 U.S.C. § 112, first paragraph (enablement requirement)

3. Claims 26-34 and 40-50 were rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the enablement requirement. In particular, the Examiner asserts that the production of "at least one non-visual sensation" by the claimed sensory producing substance is not enabled and the introduction of such a term into the claims may be new matter. Specifically, the Examiner notes that Applicants discuss the "visual" effects of their housing on pages 2 and 13-15. However, as pointed out in the RCE submission filed January 26, 2006, which arguments are repeated and expanded upon below, the Examiner has ignored the other areas of the specification where Applicants clearly provide disclosure of various ***non-visual*** effects of sensory producing substances used to alternatively implement Applicants' claimed housing. Moreover, the Examiner has completely failed to meet his burden, under M.P.E.P. § 2164.04, of establishing a reasonable basis to question the enablement provided for the claimed invention. As a result, Applicants respectfully disagree with the Examiner's position and request withdrawal of the enablement rejection.

As the Examiner notes, one feature of Applicants' specification is the use of an appearance changing substance, such as a combination of colored fluids and decorative substances or the inclusion of internal fiber optics, to change the ***visual*** appearance of Applicants' housing responsive to a stimulus. (*See, e.g.*, pp. 10-11, and 13-15) However, Applicants clearly state, at various other locations of Applicants' originally filed specification, that the "appearance changing substance" may be another type of "sensory producing substance" that produces ***non-visual*** sensations. (*See, e.g.*, pp. 5-6.) For example, on page 6, lines 6-13 Applicants state that:

> When the appearance changing substance is a ***sensory producing substance***, it can be a ***thermal*** producing substance, a ***vibration*** producing substance, and a ***haptic*** producing substance, or any combination therein. For example, the appearance changing substance can cause the housing 12 to interact with the muscles and tendons that give the human a sensation of a force being applied. Similarly, the housing 12 can interact with the nerve endings in the skin that indicate ***heat, pressure, and texture***. It will be appreciated by one of ordinary skill in the art that the sensory producing substance can be any of those substances mentioned herein or an equivalent.

(Emphasis added.)

Applicants further state, on page 10, line 19 through page 11, line 7, that the appearance changing substance as originally claimed can produce visual (e.g., color, pattern, illumination, and/or shape) and/or ***non-visual*** (e.g., thermal, vibration, and/or haptic) sensations. In particular, on page 10, lines 20-23, Applicants state that the appearance changing substance can be "a color changing substance, a pattern changing substance, an illumination producing substance, a shape changing substance, and a ***sensory producing substance*** or any combination [thereof]." (Emphasis added.) Applicants go on to further state, at page 10, line 23 through page 11, line 2, that "[i]t will be appreciated by one of ordinary skill in the art that the appearance changing substance can be any of those substances mentioned herein or an equivalent."

On page 11, lines 3-5 of the originally filed specification, Applicants also state that the ***sensory producing substance*** can be "a thermal producing substance, a vibration producing substance, and a haptic producing substance, or any combination [thereof]." Applicants go on to further state, at page 11, lines 5-7, that "[i]t will be appreciated by one of ordinary skill in the art that the sensory producing substance can be any of those substances mentioned herein or an equivalent."

As is clear from the foregoing excerpts of Applicants' specification, Applicants have clearly advised those of ordinary skill in the art that the sensory producing substance can produce one or more ***non-visual*** sensations alone or in combination with a visual sensation. Moreover, independent claims 26, 29, and 32 of the elected invention used the term "sensory producing substance" in the original filing thereof as part of Applicants' first RCE dated February 10, 2005, and Applicants clearly directed the Examiner's attention therein to page 6, lines 6-13, page 10, line 19 through page 11, line 7, and other areas of the specification in order to evidence support for use of such term in the claims that are presently under examination.

In order to make a rejection under 35 U.S.C. § 112, first paragraph, based on an alleged lack of an enablement, the Examiner has the initial burden to establish a reasonable basis to question the enablement provided for the claimed invention. M.P.E.P. § 2164.04. A specification disclosure which contains a teaching of the manner and process of making and using an invention in terms which correspond ***in scope***, as opposed to verbatim, to those used in describing and defining the subject matter sought to be patented ***must*** be taken as being in compliance with the enablement requirement of 35 U.S.C. 112, first paragraph, unless there is a reason to doubt the objective truth of the statements contained therein which must be relied on for enabling support. *Id.* As stated by the CCPA, "it is incumbent upon the Patent Office, whenever a rejection on this basis is made, to explain *why* it doubts the truth or accuracy of any statement in a supporting disclosure and to back up assertions of its own with acceptable evidence or reasoning which is inconsistent with the contested statement. Otherwise, there would be no need for the applicant to go to the trouble and expense of supporting his presumptively accurate disclosure." *Id.* (citing *In re Marzocchi*, 439 F.2d 220, 224, 169 USPQ 367, 370 (CCPA 1971) (emphasis in original)). As long as the specification discloses at least one method for making and using the claimed invention that bears a reasonable correlation to the entire scope of the claim, then the enablement requirement of 35 U.S.C. § 112, first paragraph, is satisfied. M.P.E.P. § 2164.01(b).

The test for enablement is whether the claimed invention has been described in such a way that any person skilled in the art can make and use the invention ***without undue experimentation***. M.P.E.P. § 2164.01 (emphasis added). The determination that "undue experimentation" would have been needed to make and use the claimed invention is not a single, simple factual determination. M.P.E.P. § 2164.01(a). Rather, it is a conclusion reached by weighing ***all*** of the following factual considerations:

(A) The breadth of the claims;

(B) The nature of the invention;

(C) The state of the prior art;

(D) The level of one of ordinary skill;

(E) The level of predictability in the art;

(F) The amount of direction provided by the inventor;

(G) The existence of working examples; and

(H) The quantity of experimentation needed to make or use the invention based on the content of the disclosure.

*Id.* (citing *In re Wands*, 858 F.2d 731, 737, 8 U.S.P.Q.2d 1400, 1404 (Fed. Cir. 1988)) (emphasis added).

While the Examiner need not discuss each of the above factors in the enablement rejection, the language of the rejection should focus on those factors, reasons, and evidence that lead the Examiner to conclude that the specification fails to teach how to make and use the claimed invention without undue experimentation, or that the scope of any enablement provided to one skilled in the art is not commensurate with the scope of protection sought by the claims. M.P.E.P. § 2164.04 (emphasis in original). It is improper to conclude that a disclosure is not enabling based on an analysis of only one of the above factors while ignoring one or more of the others. M.P.E.P. § 2164.01(a). The Examiner's analysis ***must*** consider all the evidence related to each of these factors, and any conclusion of non-enablement must be based on the evidence as a whole. *Id.* (emphasis added).

In the present case, the entire extent of the Examiner's enablement and written description rejections is simply that the inclusion of the term "at least one non-visual sensation" in the claims is "questionable and contradicting the original disclosure which stated that it has 'visual' effects in pages 2, 13-15 of the original disclosure." Thus, the Examiner has failed to make a prima facie case of non-enablement because the Examiner has failed to consider ***any*** of the undue experimentation factors set forth in *In re Wands* as required under M.P.E.P. § 2164.01(a). Additionally, as Applicants have detailed above and in the RCE submission dated January 26, 2006, Applicants have described the use of sensory producing substances to produce non-visual (e.g., vibration, texture, pressure, and other haptic) effects. As a result, Applicants' use of the term "at least one non-visual sensation" does not contradict Applicants' original specification.

As previously explained in Applicants' RCE submission dated January 26, 2006, while Applicants have not expressly used the term "non-visual" in the specification, such express use is

not necessary in order to have an enabling disclosure so long as the term used in the claims corresponds ***in scope*** to the disclosed manner of making and using the invention. *See* M.P.E.P. § 2164.04. In the present case, Applicants use of the term "non-visual" in the claims is within the scope of the manner of making and using the invention described in the specification. Applicants provide examples in their specification of various "non-visual" sensations that may be produced by the recited "sensory producing substance." The examples of thermal, vibration and haptic sensations are all ***non-visual***. Thus, the various examples of non-visual sensations provided in Applicants' specification bear a reasonable correlation to the entire scope of the claim (i.e., "non-visual sensation"). Thus, the enablement requirement of 35 U.S.C. § 112, first paragraph, is satisfied. *See* M.P.E.P. § 2164.01(b). In other words, Applicants have enabled those of ordinary skill in the art to make and used the claimed invention and the claimed subject matter is not new matter.

Based on the foregoing, Applicants submit that the Examiner has not established a reasonable basis to question the enablement of Applicants' invention as required under M.P.E.P. § 2164.04. Alternatively, to the extent the Examiner has established such a reasonable basis (which Applicants contest), Applicants have rebutted the Examiner's basis by identifying specific portions of the specification that support Applicants' claim terminology. Therefore, Applicants respectfully request that the enablement rejection of claims 26-34 and 40-50 under 35 U.S.C. § 112, first paragraph, be withdrawn.

Rejections under 35 U.S.C. § 112, first paragraph (written description requirement)

4. Claims 26-34 and 40-50 were rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. In particular, as noted above, the Examiner asserts that Applicants' inclusion of the term "at least one non-visual sensation" in the claims is "questionable and contradicting the original disclosure which stated that it has 'visual' effects in pages 2, 13-15 of the original disclosure." (*See* Office Action, p. 4.) However, as pointed out in the RCE submission filed January 26, 2006, which arguments are repeated and expanded upon above, the Examiner has ignored the other areas of the specification where Applicants clearly provide disclosure of various ***non-visual*** effects of sensory producing substances used to alternatively implement Applicants' claimed housing. Moreover, the

Examiner has completely failed to meet his burden, under M.P.E.P. § 2163.04, of presenting by a preponderance of evidence why a person skilled in the art would not recognize in Applicants' disclosure a description of the invention defined by the claims. As a result, Applicants respectfully disagree with the Examiner's position and request withdrawal of the written description rejection.

The inquiry into whether the written description requirement is met must be determined on a case-by-case basis and is a question of fact. M.P.E.P. § 2163.04 (citing *In re Wertheim*, 541 F.2d 257, 262, 191 USPQ 90, 96 (CCPA 1976)). A description as filed is presumed to be adequate, unless or until sufficient evidence or reasoning to the contrary has been presented by the Examiner to rebut the presumption. *Id.* (citing *In re Marzocchi*, 439 F.2d 220, 224, 169 USPQ 367, 370 (CCPA 1971)). The Examiner, therefore, must have a reasonable basis to challenge the adequacy of the written description. *Id.* The Examiner has the initial burden of presenting by a preponderance of evidence why a person skilled in the art would not recognize in an applicant's disclosure a description of the invention defined by the claims. *Id.* (citing *Wertheim*, 541 F.2d at 263, 191 USPQ at 97).

M.P.E.P. § 2163 provides examination guidelines pertaining to the written description requirement. To satisfy the written description requirement, a patent specification must describe the claimed invention in sufficient detail that one skilled in the art can reasonably conclude that the inventor had possession of the claimed invention. M.P.E.P. § 2163.

In rejecting a claim based on a failure to comply with the written description requirement, the Examiner ***must*** set forth express findings of fact which support the lack of written description conclusion. M.P.E.P. § 2163.04 (emphasis added). These findings should (a) identify the claim limitation at issue and (b) establish a *prima facie* case by providing reasons why a person skilled in the art at the time the application was filed would not have recognized that the inventor was in possession of the invention as claimed in view of the disclosure of the application as filed. *Id.*

In the present case, the Examiner has identified the claim limitation at issue, namely, "at least one non-visual sensation," but has failed to establish a *prima facie* case by providing ***fact-based*** reasons why a person skilled in the art at the time the application was filed would not have recognized that the inventor was in possession of the invention as claimed in view of the disclosure of the application as filed. Instead of supplying "express findings of fact" as required

by M.P.E.P. § 2163.04, the Examiner has presented his conclusions (i.e., that use of the term "non-visual" in the claims is "questionable and contradicting the original disclosure") without considering all the facts, particularly the facts detailed by Applicants in the RCE submission dated January 26, 2006, wherein Applicants' expressly indicated where and how the original specification supported use of the term "non-visual."

Therefore, the Examiner has failed to make a *prima facie*, fact-based showing why a person skilled in the art at the time the application was filed would not have recognized that the inventor was in possession of the invention as claimed in view of the disclosure of the application as filed as required by M.P.E.P. § 2163.04.

Alternatively, even if the Examiner's basis for making the written description rejection complies with the *prima facie* requirement set forth in M.P.E.P. § 2163.04 (which Applicants contest that it does), Applicants specification complies with the written description requirement of 35 U.S.C., first paragraph, because the specification describes the claimed invention in sufficient detail that one skilled in the art can reasonably conclude that the inventor had possession of the claimed invention. *See* M.P.E.P. § 2163. The fundamental factual inquiry for compliance with the written description requirement is whether the specification conveys with ***reasonable*** clarity to those skilled in the art that, as of the filing date sought, applicant was in possession of the invention as now claimed. M.P.E.P. § 2163.02 (emphasis added). However, the subject matter of the claim need ***not*** be described literally (i.e., using the same terms or *in haec verba*) in order for the disclosure to satisfy the written description requirement. *Id.* (emphasis added).

As detailed in Section 3 above responsive to the enablement rejection and in Applicants' RCE submission dated January 26, 2006, Applicants have clearly pointed to various locations of the originally filed specification from which those skilled in the art could reasonably conclude that Applicants had possession of the claimed invention. In particular, page 6, lines 6-13; page 10, line 19 through page 11, line 7; page 10, lines 20-23; page 11, lines 3-5; and other locations clearly show that Applicants had invented not only a housing that visually changed appearance responsive to a stimulus, but also or alternatively a housing that produced a non-visual (e.g., thermal, vibration, pressure, or other haptic) sensation responsive to a stimulus. Applicants did not expressly use the term "non-visual" in the specification, but such use is not necessary to

support the written description requirement so long as those skilled in the art could reasonably conclude that Applicants had possession of the claimed invention. *See* M.P.E.P. § 2163.02. Possession may be shown in a variety of ways including description of an actual reduction to practice, or by showing that the invention was "ready for patenting" such as by the disclosure of drawings or structural chemical formulas that show that the invention was complete, ***or by describing distinguishing identifying characteristics sufficient to show that the applicant was in possession of the claimed invention.*** M.P.E.P. § 2163(I) (emphasis added).

In the present case, Applicants have shown possession of the claimed invention by describing distinguishing identifying characteristics, namely, several species of non-visual sensations, sufficient to show that Applicants were in possession of the claimed genus, namely, "at least one non-visual sensation."[1] As a result, Applicants have rebutted the Examiner's assertions and have established their compliance with the written description requirement. Therefore, Applicants respectfully request that the written description rejection of claims 26-34 and 40-50 under 35 U.S.C. § 112, first paragraph, be withdrawn.

Rejections under 35 U.S.C. § 102(e)

5. Claims 26-34 and 40-50 were rejected under 35 U.S.C. § 102(e) as being anticipated by Lehtiniemi et al. ("Lehtiniemi"). In particular, the Examiner asserts that Lehtiniemi discloses the production of "at least one non-thermal, non-visual sensation" at column 1, lines 58-67. In other words, the Examiner has simply repeated the rejection set forth in the Final Office Action dated October 26, 2005. Applicants again disagree with the Examiner's characterization of the present invention in view of the cited reference.

"A claim is anticipated only if ***each and every*** element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." M.P.E.P. § 2131 (quoting *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987)). As detailed below, Lehtiniemi fails to expressly or inherently describe each and every claim limitation of Applicants' claims. In particular, Lehtiniemi fails to disclose

[1] The claimed limitation is actually "at least one non-thermal, non-visual sensation"; however, Applicants have limited their discussion to "non-visual" sensation with respect to the rejections under 35 U.S.C. 112, first paragraph, because the Examiner has only indicated an objection to Applicants' use of the term "non-visual" and has not objected to Applicants' use of the term "non-thermal."

use of a sensory producing substance that produces a sensation that is both non-thermal ***and*** non-visual.

Lehtiniemi discloses a portable electronic device housing coated or mixed to include thermochromic liquid crystals (TLCs) that change color responsive to changes in temperature. The changes in temperature may be due to changes in ambient temperature of the environmental surroundings of the portable electronic device or may be due to the internal heating of the electronic components of the portable electronic device. *See* Abstract, col. 1, lines 58-67. Thus, Lehtiniemi discloses only that a portable electronic device housing, or some portion thereof, changes color (i.e., makes a ***visual*** change) responsive to changes in temperature.

While Applicants believe that Lehtiniemi fails to disclose or suggest any *non-visual or other sensory* changes to the device housing, or production of any *non-visual or other sensations*, responsive to temperature changes or any other stimulus, Applicants nevertheless amended their claims responsive to the Final Office Action dated October 26, 2005 to include the "non-thermal" limitation. Lehtiniemi simply fails to disclose a housing that produces both a non-visual and non-thermal sensation responsive to any stimulus. Other than directing Applicants' attention to col. 1, lines 58-67, the Examiner has failed to identify any implied or express disclosure of Lehtiniemi where Lehtiniemi discloses the production of a non-thermal, non-visual sensation responsive to a stimulus. Applicants have examined and re-examined Lehtiniemi and can find no support for the Examiner's position. The disclosure at column 1, lines 58-67, is specifically directed and limited to the change of the visual appearance of the device housing responsive to a thermal stimulus. Since the device housing is heating up to produce the change in visual appearance, a user of the device may feel a thermal sensation, but any such sensation is omitted from the text of Lehtiniemi. Lehtiniemi does not disclose or even envision any form of non-thermal sensation.

Applicants have further considered Laurikka et al. (U.S. Patent No. 6,608,996) and Berry (U.S. Patent No. 5,223,958), both already of record, and submit that both references, like Lehtiniemi, fail to disclose or suggest any ***non-thermal, non-visual*** changes to the device housing, or production of *any* ***non-thermal, non-visual*** *sensations*, responsive to temperature changes or any other stimulus. Rather, Laurikka et al. ("Laurikka") discloses only that the electronic device housing, or portion(s) thereof, changes color (i.e., a ***visual*** change) in response

to a variety of stimuli, including the type of message that has been received by the device. Berry discloses only that a hidden message appears (i.e., a ***visual*** change) in response to a thermal stimulus.

By contrast, Applicants' independent claims recite housings that include a sensory producing substance that produces at least a ***non-thermal, non-visual*** sensation responsive to one or more stimuli. As recited in some of the dependent claims, the non-thermal, non-visual sensation produced by the sensory producing substance may be a non-thermal, haptic sensation (i.e., relating to one's sense of touch), such as a texture sensation, a pressure sensation, and/or a vibratory sensation. Neither Lehtiniemi nor Latrikka, Berry or any of the other references of record disclose or suggest any housing containing a substance that produces a ***non-thermal, non-visual*** sensation responsive to a stimulus.

The Examiner further asserts that Lehtiniemi discloses that the housing's sensory producing substance produces one or more of a vibration, a pressure sensation, and a texture sensation. (*See, e.g.*, claims 28, 31, and 47). In support of his position, the Examiner directs Applicants' attention to col. 1, lines 58-67 and col. 2, lines 3-14 of Lehtiniemi. Applicants submit that neither the cited portion of Lehtiniemi nor any other portion of Lehtiniemi discloses or even remotely suggests any change to the cover or production of any sensation other than a visual sensation related to a change of color. As is clear from a careful reading of Lehtiniemi, including the disclosure at col. 1, lines 58-67 and col. 2, lines 3-14, Lehtiniemi discloses a housing substance that changes color responsive to changes in temperature. Lehtiniemi does not disclose or suggest a housing that produces any other type of sensation, especially a vibration, a pressure sensation, and/or a texture sensation. Neither Lehtiniemi nor any of the cited references of record disclose or even remotely suggest the use of any substance that produces any haptic (i.e., touch related) sensation responsive to any form of stimulus. Rather, all of the references of record disclose substances that produce specific ***visual*** sensations responsive to thermal and other specific stimuli.

Therefore, based on the foregoing, Applicants submit that independent claims 26, 29, 32, 34, and 40 are not anticipated by Lehtiniemi and respectfully request that the rejections of claims 26, 29, 32, 34, and 40 be withdrawn and said claims be passed to allowance.

Claims 27, 28, 30, 31, 33, and 41-50 are dependent upon claims 26, 29, 32, and 40, which claims have been shown allowable above. Therefore, since claims 27, 28, 30, 31, 33, and 41-50 each introduce additional subject matter that, when considered in the context of the recitations of their respective base claims, constitutes patentable subject matter, Applicants respectfully submit that the recitations of claims 27, 28, 30, 31, 33, and 41-50 are not disclosed or suggested by Lehtiniemi. Further, with respect to claims 27, 30, 49, and 50, neither Lehtiniemi nor any of the other references of record disclose a housing that includes a non-thermal, haptic producing substance. Still further, with respect to claims 28, 31, and 47, none of the references of record disclose a housing that includes a substance that produces one of a vibration, a pressure sensation, and a texture sensation. Further yet, with respect to claims 33, 41, 44, and 48, none of the references of record disclose a housing that includes a substance that produces a ***non-thermal, non-visual*** sensation responsive to an acoustic stimulus, an electromagnetic stimulus, an olfactory stimulus, or a mechanical stimulus. Instead, all the references of record simply disclose housings that include ***visual*** producing substances only. Therefore, Applicants respectfully submit that claims 27, 28, 30, 31, 33, and 41-50 are in proper condition for allowance.

Information Disclosure Dated April 11, 2006 and Filed April 14, 2006

6. On April 14, 2006, Applicants filed an Information Disclosure Statement with fee in order to cite four references cited in a counterpart foreign application. Two of the references, namely, Chinese Patent No. CN 2427937Y and Japanese Patent No. JP 11261677, were foreign language references. Applicants have now had these two references translated into English and enclose the English translations for the Examiner's reference and consideration. Applicants submit that the pending claims are patentable over the two aforementioned references because neither reference, whether taken alone or in combination, discloses a housing having an outer surface that includes a sensory producing substance that produces at least a ***non-thermal, non-visual*** sensation responsive to a stimulus.

7. The Examiner is invited to contact the undersigned by telephone, facsimile or email if the Examiner believes that such a communication would advance the prosecution of the instant application. Please charge any necessary fees associated herewith, including extension of time fees (if applicable and not paid by separate check), to the undersigned's Deposit Account No. 50-1111.

Respectfully submitted,

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# APPENDIX I
# ENGLISH TRANSLATION OF CHINESE PATENT NO. CN 2427937Y

English translation of D3 (CN2427937Y)

# Multifunctional Holder for Handset

The present utility model relates to office supplies, and more particularly to a multifunctional holder for handset, which has decoration function and can serve as a gift, an artware or an ornament.

The conventional holder for handset, such as an upright type one, mostly has only a simple cavity for receiving the handset therein. The drawback of such holder is in that it has only simple function and looks like a flat and insipid article.

The object of the present utility model is to provide a functional holder for handset without the above drawback.

The holder for handset according to the present utility model comprises a cavity the size and shape of which corresponds to the profile of the handset and in which the handset is receivable. A rod-shaped visiting card clip, an incoming call number display and a pen hole are disposed on the holder. The size, shape and depth of the pen hole correspond to the pen and the pen can be inserted into the pen hole. A hollow transparent base is provided in the bottom of the holder, in which liquid and float are enclosed.

The functional holder for handset according to the present utility model of the above structure provides the user with many conveniences, has a good ornamental effect, and can be used as a gift, an artware or an ornament.

The present utility model will be further described in detail in the following with reference to the drawings and embodiments:
Fig.1 is a schematic view of the structure of the functional holder for handset according to the embodiment of the present utility model;
Fig. 2 is a side sectional view of the multifunctional holder for handset according to the embodiment of the present utility model; and
Fig.3 is a plan view of the multifunctional holder for handset according to the embodiment of the present utility model.

As shown in Fig.1, the multifunctional holder for handset comprises a cavity 2 and a hollow transparent base 6. A rod-shaped visiting card clip 1, an incoming call

number display 3 and a pen hole 4 are disposed on the holder 6. The size, shape and depth of the pen hole 4 correspond to the pen and the pen can be inserted into the pen hole 4. One or two transparent liquids with different specific gravities and colors, such as uncolored transparent water 8 and colored oil 9, may be enclosed in the hollow transparent base 6. Also a float 5 for floating in the liquids is enclosed in the hollow transparent base 6. The float 5 is formed of low- mass plastic foam and coated with colored animal patterns. The specific gravity of the float 5 is between that of the oil 9 and the water 8. A weight 7 (e.g. of iron or lead) is provided in the bottom of the float 5 so as to form the gravity center of the float, such that the float 5 may stay in a floating state at a level (water surface). Thus, in a static state the float 5 steadily stays on the water surface with the water below and the oil above. When slightly shaking the holder, the water and the oil layers move at different speeds, while the float 5 moves up and down according to the movement of the liquids, resulting in a good taste in both the dynamic and the static states.

As shown in 2, the angle between the rear side of the cavity 2 of the functional holder for handset according to the present utility model and the horizontal direction is 100°, so that the handset can be put into the cavity 2 slightly slantwise.

As shown in Fig.3, the visiting card clip 1 of the functional holder for handset according to the present utility model is located at the upper–left corner of the cavity 2. The incoming call number display 3 is round and located at the left side of the cavity 2. The pen hole 4 is located at the right side of cavity 2.

# APPENDIX II
# ENGLISH TRANSLATION OF JAPANESE PATENT NO. JP 11261677

English translation of D1 (JP11-261677)

# Portable Terminal Device

**Field of the Invention**

The present invention relates to a portable terminal device, more particularly to a portable terminal device, which receives and transmits information between base stations via radio wave.

**Description of the Related Art**

The portable terminal device, such as portable telephone or PHS (Personal Handyphone System), is becoming very popular as its call charge drops down.

Generally, such a portable terminal device is often carried in a handbag and the like. In this state, the user needs to find and take the device out of the handbag upon receiving a call.

Recently, with the device size being increasingly miniaturized, it is becoming difficult and inconvenient to find and take the device out of the handbag.

Particularly, when more than one devices are put together in a handbag, it is not easy for the user immediately to find which one has received a call.

**Summary of the present Invention**

In view of the above problem the present invention has been made and therefore the object of the present invention is to provide a portable terminal device, which can be easily found at once, for example, even when it is put into a handbag.

According to the present invention, to overcome the above prior art problem, there is provided a portable terminal device for receiving and transmitting information between base stations via radio wave, characterized in that, the device comprises: a receiving unit for receiving radio wave from base station; a detecting unit for detecting a call signal received by the receiving unit; and a temperature difference generation unit for generating a temperature difference between a portion of the device and the atmosphere upon a call signal being detected by the detecting unit.

Here, the receiving unit receives radio wave from base station. The detecting unit detects the call signal received by the receiving unit. The temperature difference

generation unit generates a temperature difference of the device against the ambient temperature upon detecting a call signal by the detecting unit.

For example, the receiving unit receives radio wave from base station, the detecting unit detects a call signal received by the receiving unit, the temperature difference generation unit, which for example is composed of a Peltier element, lowers the temperature of a casing of the portable terminal device, so that the user can easily and immediately find the device which has received the call through feeling with his or her hand.

**Brief Description of the Drawings**

Embodiments of the invention will be described in detail in the following with reference to the drawings, in which:

Fig. 1 is a view of the operation principle of the present invention.

Fig.2 is a view showing the appearance of the portable terminal device according to the embodiment of the present invention.

Fig.3 is a view of the appearance observed from the back of the terminal device shown in Fig. 2.

Fig.4 is a block view of the electric configuration of the device shown in Fig.2.

Fig.5 is a view showing the details of the cooling member in Fig.4.

Fig.6 is a view showing the appearance of the portable terminal device according to the second embodiment of the present invention.

**Detailed Description of the Preferable Embodiment**

The embodiments are described in greater detail in conjunction with the drawings below. Fig. 1 is a view of the operation principle of the present invention. In Fig. 1, an antenna 1 receives and transmits information from and to unshown base stations with the radio waves used as a transmission medium.

A casing 2, for example, formed of plastic, serves to hold the antenna 1 and protect the internal circuitry. A receiving unit 3 converts the radio wave captured by the antenna 1 into the electric signal. A detecting unit 4 detects the call signal received from base station by the receiving unit 3. A temperature difference generation unit 5, which for example is composed of a Peltier element, serves to cool (or heat) a metallic member 6 formed on at least a portion of the casing 2.

A stop unit 7 serves to disable the function of the temperature difference generation unit 5 so that the temperature difference generation unit 5 does not work upon a call

signal being received. A detailed description for operating principle shown in Fig. 1 is given below.

When a call signal is sent from the base station in order to call the user of the device, the antenna 1 captures the signal. The receiving unit 3 converts the captured radio wave into the corresponding electric signal and outputs it.

The detecting unit 4 detects whether the radio wave received by the receiving unit 3 is a call signal, and when the detecting unit 4 decides that the radio wave is a call signal, it provides a predetermined control signal to the temperature difference generation unit 5 so as to generate a temperature difference.

Then, the temperature difference generation unit 5 lowers the temperature of the metallic member 6. And thus the temperature of the metallic member 6 drops down. Therefore, for example, when a call is received by the portable terminal device that is put into a handbag, the user can easily and immediately find it by hand feeling the temperature difference between the device and the other articles around it.

Fig.2 is a view showing the appearance of the portable terminal device according to the embodiment of the present invention. In this view, an antenna 21 receives and transmits information from and to unshown base stations with the radio waves used as a transmission medium.

A casing 10 serves to hold the antenna 21 and protect the internal circuitry. The front face 10a of the casing 10 is provided with various display portions and operation portions: a speaker 25, a display 27, an input portion composed of various push buttons 28a-28i, and a microphone 26.

The speaker 25 converts the audio signal transmitted from the base station into the corresponding sound and outputs it. The display 27 displays the characters corresponding to the pressed push buttons 28a-28i and displays other related information, such as the power remains of the battery and the strength of the received radio wave.

The push buttons 28a-28i are, for example, operated during entering the phone number of a called party or making various settings of the device. The microphone 26 converts the user' s sound into the corresponding electric signal.

Fig.3 is a view of the appearance observed from the back of the terminal device shown in Fig, 2. As shown in Fig. 3, the back face 10b is composed of a metallic member. Alternatively, the whole casing may be made of a metallic member, or only a portion of the casing (e.g. half of the back face 10b) may be made of a metallic member.

Preferably, the metallic member is formed of a metal with a high thermal conductivity, such as copper, aluminum.

Fig.4 is a block view of the electric configuration of the device shown in Fig.2. In Fig.4, the antenna 21 receives and transmits information from and to unshown base stations with the radio waves used as a transmission medium.

A RF (Radio Frequency) unit 22 converts the radio wave captured by the antenna 21 into electric signal and outputs it to a audio circuit 23, and modulates the radio wave based on the electric signal (audio signal) supplied by the audio circuit 23 and transmits it to the base station through the antenna 21.

The audio circuit 23 amplifies the electric signal (audio signal) supplied by the RF unit 22 and outputs the amplified audio signal to the speaker 25, and amplifies the audio signal supplied by the microphone 26 and outputs the amplified signal to the RF unit 22.

A CPU (Central Processing Unit) 24 controls all the portions of the whole device and executes various processes. The speaker 25 converts the audio signal amplified by the audio circuit 23 into the corresponding sound and outputs it. The microphone 26 converts the user's sound into the corresponding electric signal and supplies it to the audio circuit 23.

The display 27, as shown in Fig. 2, is disposed on the front face 10a of the casing 10, to display the phone number of the opposite party in session and other information. The input portion 28, as shown in Fig. 2, is composed of the push buttons 28a-28i and is operated during entering the phone number of the opposite party to communicate with it and changing the settings of the device.

A ROM (Read Only Memory) 29 stores the various programs executed by the CPU 24. A RAM (Random Access Memory) 30 temporarily stores the data produced

when the CPU 20 conducts the various processes and stores the telephone directory etc.

A transistor 31 serves as a semiconductor switch and is put into the on or off state to supply a voltage Vdd to a cooling unit 32 respectively, under the control of the CPU24.

The cooling unit 32, for example, comprising a Peltier element, serves to make the temperature of the back face 10b of the casing 10 lower. Fig.5 is a view showing the details of the cooling member 32 in Fig.4.

As shown in Fig. 5, the cooling member 32 is disposed in contact with the metallic member of the back face 10b of the casing 10. The cooling member 32 is a Peltier element with a surface for absorbing heat and the other surface for dissipating heat. In the present embodiment, the surface for absorbing heat is disposed to contact with the metallic member of the back face 10b.

The transistor 31 is controlled by the CPU 24, to turn on or off the current supplied by a battery 33. The battery 33 is, for example, a secondary battery such as Ni-Cd battery.

Nest, the operation of the above embodiment is described. When a call signal is sent from the unshown base station, the antenna 21 captures the call signal and provides it to the RF unit 22. The RF unit 22 temporarily converts the provided signal into the signal of medium frequency, and then converts it into corresponding electric signal, and finally provides it to the CPU 24.

The CPU 24 refers to the electric signal provided by the RF unit 22 and decides that the call signal has been received, and then turns on the transistor 31. Consequently, the cooling member 32 is energized by the battery 33.

As shown in Fig. 5, the cooling member 32 is such configured that its surface for absorbing heat contacts the back face 10b of the casing 10, thereby the temperature of the back face 10b lowers as the temperature of the surface for absorbing heat decreases.

In the case that the terminal device lies in the user's handbag, the user can easily and immediately find the device that has received the call by hand feeling the cooled portion of the casing.

Although in the above embodiment the Peltier element is used as a cooling member, it also can be used as a heating member by changing the direction of the current flowing through it. Therefore, the Peltier element, for example, can be respectively used as a cooling member when the ambient temperature being high (e.g. in summer), and as a heating member when the ambient temperature being low.

Also, the operation of the cooling unit 32 can be disabled by appropriately operating the push buttons 28-28i. For example, in the case there needs no to use the Peltier element as a cooling member when the device is put into a pocket in the user' clothes, the push buttons 28a ("1") and 28b ("2") are simultaneously pressed, so that the function of the cooling member 32 is disabled upon receiving a call.

Hereafter, the second embodiment of the present invention is described in conjunction with Fig.6 and Fig.7. Fig.6 is a view showing the appearance of the portable terminal device according to the second embodiment of the present invention, viewed from the back face 10b.

In the second embodiment, three holes 35a-35c are formed at the lower end of the back face 10b. The cooled air is discharged from the holes 35a-35c when a call signal is received.

Fig.7 is a block view of the circuitry configuration of the device shown in Fig. 6. In Fig.7, the same parts to that of the Fig. 4 are indicated by the same references and thus their descriptions are omitted.

In the embodiment, comparing to the embodiment shown in Fig.4, the device further comprises an air blowing unit 40, the other portions being the same. The air blowing unit 40 draws in the air cooled by the cooling unit 32, and then the cooled air is compressed by a small built-in fan (e.g. centrifugal fan) and is discharged through the hole 35a-35c formed on the back face 10b, as shown in Fig.6.

The operation of the second embodiment is described below. When a call signal is sent from the unshown base station, the antenna 21 captures the call signal and provides it to the RF unit 22. The RF unit 22 temporarily converts the provided

signal into the signal of medium frequency, and then converts it into corresponding electric signal, and finally provides it to the CPU 24.

The CPU 24 refers to the electric signal provided by the RF unit 22 and decides that the call signal has been received, and then turns on the transistor 31. Consequently, the cooling unit 32 and the air-blowing unit 40 are energized by the battery 33.

As shown in Fig.7, the air cooled by the cooling unit 32 is drawn into the air-blowing unit 40 and is discharged through the holes 35a-35c formed on the back face 10b of the casing 10 as shown in Fig.6.

In the case that the portable terminal device lies in a handbag, the user can easily and immediately find it when receiving a call, through hand feeling the cooled air discharged through the holes 35a-35c, even without directly touching the casing 10.

Further, in the above embodiment the air cooled by the cooling unit 33 is discharged. Alternatively, heated air may be discharged by using Peltier element as a heating element.

Also, the air, neither cooled nor heated, can be drawn in and discharged. In this way, the power of the battery can be saved.

In the above embodiment, there are three holes 35a-35c provided on the back face 10b of the casing 10, however, the number of the holes and their position are not limited to this way.

**Effects of the Present Invention**

In the portable terminal device according to the present invention, the receiving unit receives radio wave emitted from the base station, the detecting unit detects the call signal received by the receiving unit, the temperature difference generation unit generates a temperature difference between the device and the atmosphere when the device has received a call signal, therefore the user can easily and immediately find the device through feeling the temperature difference.